

**TRW** SPACE TECHNOLOGY LABORATORIES  
THOMPSON RAMO WOOLDRIDGE INC.

our new name is  
**TRW SYSTEMS**  
**TRW INC.**



**STARS** ★ **MOD 3** ★ **SPACE TECHNOLOGY AZIMUTH REFERENCE SYSTEM**  
FIRST GYROSCOPIC NORTHSEEKER TO DEMONSTRATE OPTICAL ACCURACY



## STARS MOD 3 FEATURES

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**UNUSUALLY HIGH ACCURACY** . . . Based on a new patented principle for removing drift and bias errors, STARS MOD 3 is a product of over 4 years of development and testing. It is the first azimuth reference system capable of aligning ballistic missiles or calibrating high-precision inertial navigation equipment. **ABSOLUTE ACCURACY APPROXIMATES OPTICAL SYSTEMS USED FOR SECOND-ORDER FIELD SURVEYS.**

**FAST REACTION TIME** . . . Accurate azimuth readings in 5 minutes . . . ultimate precision within 1 hour.

**ALL-WEATHER** . . . Self-calibrating . . . needs no external references . . . can be used under all weather conditions and in locations where there is no line of sight to the sun or Polaris.

**PORTABLE** . . . Consists of a sensor unit and an electronics unit. When packaged for field applications the combined weight is less than 35 pounds.

**FULLY AUTOMATIC** . . . Operator selects mode of operation and measurement time . . . all sequencing is automatic. Direct digital readout of azimuth angle.

**RELIABLE** . . . Design MTBF over 10,000 hours

**DEMONSTRATED PERFORMANCE** . . . Extensive laboratory testing . . . delivered units have completed operating dynamic tests and field tests on an inertial guidance platform in a mobile transport vehicle.

### APPLICATIONS

*Initial alignment of mobile missile guidance systems*

*Backup reference for silo missiles*

*Calibration of inertial navigation equipment*

*Spacecraft planetary return guidance*

*Artillery pointing*

*Underground surveying*

*Geodetic surveys*

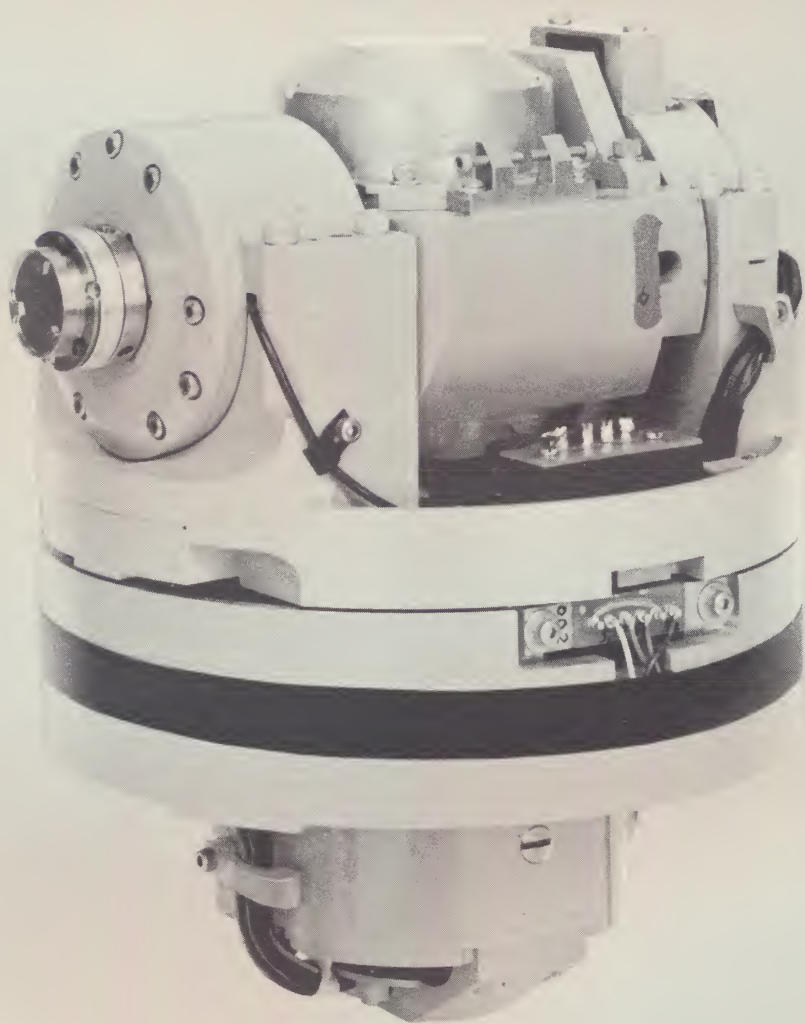


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STARS Mod 3 utilizes a small sensor unit (shown at right) incorporating a standard miniature rate-integrating gyro. STARS determines true north by sensing the earth's rotation. Drift and bias errors are removed by a patented technique for successively repositioning the gyrocompass about two axes, measuring offsets, and eliminating errors mathematically. Dimensions: diameter 6", height 8".

The electronics package (left) contains control, monitoring, and computation equipment. An auxiliary printer and power-pack (not shown) are available as required.





## SPECIFICATIONS OF THE STARS MOD 3

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### SENSOR

Weight	8 pounds
Dimensions	Diameter: 6 inches, Height: 8 inches
Gyro	Any miniature rate-integrating gyro

### ELECTRONICS

Now available in suitcase configuration. Can be miniaturized to meet customer requirements.

### POWER

Average power 125 watts.

### ABSOLUTE ACCURACY (classified)

Compares with optical instruments used for second-order field surveys.

### MEASUREMENT TIME

Accurate measurements in 5 minutes.  
Ultimate precision within 1 hour.

### READOUT

Digital number representing azimuth offset from true north.

### OFFICES

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